Contribution ID: **13** Type: **not specified**

A T-odd Momentum Correlation in Radiative Beta-Decay

Wednesday, 20 June 2012 10:00 (30 minutes)

We consider neutron radiative beta-decay and compute the T-odd
triple momentum correlation in the decay rate arising from electromagnetic final-state interactions in the Standard Model.
Our expression for the corresponding T-odd asymmetry is exact
in O(alpha) up to terms of recoil order, and we evaluate
it numerically under various kinematic conditions. Noting the universality of the V-A law in the absence of recoil order terms,
our results serve as a template for the computation of the
asymmetry in allowed nuclear and hyperon radiative beta-decays
as well. We consider the pattern of the asymmetries in nuclear decays and show that the asymmetry can be suppressed in particular cases, facilitating searches for new sources of CP-violation in such processes.

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Session Classification: Wed 9:00-10:30